ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules to Establish Rules and Policies Pertaining To a Mobile-Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands	)	CC Docket No. 92-166

To: The Commission

COMMENTS OF TRW INC.

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May 5, 1994

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To: The Commission

COMMENTS OF TRW INC.

TRW Inc. ("TRW"), by its attorneys and pursuant to Section 1.415 of the Commission's rules, hereby comments upon the Commission's Notice of Proposed Rule Making, 9 FCC Rcd 1094 (1994) ("NPRM") in the above-captioned docket. In the NPRM, the Commission proposes rules and policies for the implementation of the world's first truly global voice-capable mobile-satellite service ("MSS") systems, which will provide personal communications capability via constellations of low- and medium-Earth orbit satellites (the "MSS Above 1 GHz service").

The Commission's NPRM follows closely the re-allocation of the 1610 to 1626.5 MHz and 2483.5 to 2500 MHz frequency bands from the radiodetermination satellite service ("RDSS") alone to include a co-primary allocation

for MSS (hereafter, these bands are referred to as the "MSS/RDSS bands").[1/] The NPRM is both an expeditious and historic next step toward the implementation of commercial satellite systems that will employ state-of-the-art technology to provide a vast new range of telecommunications services to the public. As the Commission enumerated in the NPRM, these services generically include such potential capabilities as near-universal cellular-like voice services, search/rescue and disaster management communications, environmental monitoring, paging and facsimile services, and industrial monitoring and control.[2/]

However, the Commission's listing of the impressive capabilities of non-geostationary MSS Above 1 GHz service does not fully capture the variety and versatility of services that can be offered by multiple competing systems. Multiple licensees can be expected to offer countless variations of, and augmentations to, these services to meet diverse customer needs. In a competitive environment, individual system operators will be encouraged to develop specialized mobile service applications geared to serve specific market niches. Therefore, the overriding object of this proceeding must continue to be the maximization of public benefits through the adoption of regulatory policies for the MSS Above 1 GHz service that promote competition among multiple MSS systems, thereby fostering innovation among service providers.

1/ See Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands For Use By The Mobile-Satellite Service, Including Non-Geostationary Satellites, 9 FCC Rcd 536 (1994) ("Allocation Order").

2/ See NPRM, 9 FCC Rcd at 1095-96 (¶ 2).

INTRODUCTION AND SUMMARY

As the Commission states in the introduction of the NPRM, the new MSS systems that this rulemaking will authorize represent a critical opportunity for the United States to continue its leadership role in developing and implementing satellite technology as well as "promoting global development through enhanced communications infrastructure and services."[3/] The MSS Above 1 GHz service will "provide not only a variety of new services for users in this country, but also . . . communications services to parts of the world that have previously been grossly underserved."[4/]

Clearly, the ability of the United States to realize these opportunities and fulfill these goals depends greatly upon what the Commission accomplishes in this proceeding. As Vice President Gore emphasized in his recent address to the International Telecommunication Union's World Telecommunication Development Conference ("WTDC"), "[i]n order for the private sector to invest and for initiatives opening a market to competition to be successful, it is necessary to create a regulatory environment that fosters and protects competition and private sector investments, while at the same time protecting consumers' interests."[5/]

Indeed, responding to the Vice President's keynote address, the WTDC adopted a resolution endorsing the five guiding principles that he set forth for the

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3/ Id. at 1097 (¶ 4).

4/ Id. at 1095 (¶ 2).

5/ Statement by Vice President Al Gore, World Telecommunication Development Conference, Document 70-E (March 21, 1994).

development of the Global Information Infrastructure ("GII"). These principles are: (1) encouragement of private investment, (2) promotion of competition, (3) creation of a flexible regulatory framework, (4) provision of open access, and (5) assurance of universal service.[6/] In enumerating these paramount objectives, Vice President Gore stated that universal access to the global telecommunications network was the most important of these objectives.[7/]

These principles and priorities are of particular significance here, as non-geostationary satellites can play a critical role in achieving them. Vice President Gore underscored the fact that low-Earth orbit satellites could be the very means to make true universal service not only practical, but affordable.[8/] This same point was expanded upon by Commission Chairman Reed Hundt in his remarks before the WTDC later that same week: "Satellite technology offers opportunities to build a global, seamless connection among all networks. There is no more compelling case for governmental cooperation and parallel regulation than that presented by satellite providers. They seek to serve the globe, and all countries should cooperate by opening markets to their services."[9/]

The instant rulemaking will thus set the tone for the introduction of new service in the MSS/RDSS bands around the globe. For this reason, the Commission

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6/ See id.

7/ See id.

8/ See id. ("Constellations of hundreds of satellites in low-Earth orbit may soon provide telephone or data services to any point on the globe. Such systems could make universal service both practical and affordable.")

9/ Reed E. Hundt, Chairman, FCC, Speech to World Telecommunication Development Conference, March 22, 1994.

should be closely guided here by the five principles set forth in Buenos Aires, and adopt regulatory requirements that foster these goals. As Chairman Hundt stressed in his remarks to the WTDC: "[I]n order to make the most out of modern technology and entrepreneurship, all countries must not only develop adequate infrastructures, they must adopt appropriate regulatory regimes."[10/]

The NPRM demonstrates that the Commission has pursued ardently, and with great insight, the objective of formulating such an appropriate regulatory regime. The Commission has endeavored to craft an acceptable sharing solution that would permit efficient use of the MSS Above 1 GHz spectrum by multiple satellite systems, thus enabling all qualified current applicants to implement their proposals. TRW believes, however, that although the Commission's proposal establishes an excellent foundation upon which an ultimate sharing solution can be constructed, the Commission has fallen short of proposing the best possible sharing solution -- that is, one that treats all applicants fairly, provides each with sufficient usable spectrum to implement service, and secures the benefits of competition for all potential users of non-geostationary MSS service.

In these Comments, TRW restates the numerous instances in which it agrees with the general proposals advanced by the Commission. TRW, however, also offers what it considers to be essential clarifications and refinements of the specific regulatory requirements and sharing solutions that are set forth in the NPRM. It believes that the Commission must address and resolve a number of points before it can adopt final rules for the MSS Above 1 GHz. Specifically:

10/ Id.

☞ The Commission must clarify its financial standard to premise qualification upon a showing that an applicant has sufficient current assets and operating income [or other funding] to construct, launch and operate for one year that part of its proposed system that is necessary to provide regular commercial service over the United States.

☞ While TRW supports the general framework of the Commission's spectrum sharing approach, the Commission must correct flawed assumptions underlying its frequency plan which unreasonably skew the plan in favor of the sole non-spectrum-sharing applicant. Specifically, the Commission should make the following changes:

- refine its proposal to account for the current and indefinite limited usability of the lower L-band frequencies due to the current obligation to protect the Russian GLONASS system from harmful interference;

- pursue negotiations in relevant international fora to minimize the long-term limiting impact of GLONASS on MSS use of the lower L-band;

- correct its initial determination arbitrarily to allocate to the non-spectrum-sharing system substantially more spectrum than is necessary or reasonable, at the expense of the sharing-capable applicants; and

- abandon its provision for an automatic expansion of the spectrum allocated to the monopoly system and/or reduction of the spectrum allocated to a single surviving sharing-capable system without regard to the circumstances and without providing any corollary opportunity for the sharing systems to gain additional spectrum, particularly in the event that the non-sharing system does not launch.

☞ In the event that the Commission is unable to formulate a revised sharing plan that can fairly accommodate all current applicants, it should proceed to determine which of the current proposals would best serve the public interest, convenience, and necessity via the statutory comparative hearing process. Failing that, the only suitable remaining alternative would be the use of random selection procedures, as the use of competitive bidding to assign spectrum for global satellite systems would have international ramifications that are adverse to U.S. interests, including the likelihood that

extremely high costs would be imposed on U.S. systems to gain entry to foreign markets, potentially resulting in their efforts being stillborn.

☞ The Commission should press within the ITU for relaxed S-band coordination trigger levels for power flux density ("PFD"), and provide for interim coordination procedures that permit systems to demonstrate that no unacceptable interference is caused to the Fixed Service, despite PFD levels that exceed the current PFD trigger value.

☞ The Commission should address the important issue of potential interference in the L-band by secondary MSS downlink transmissions into primary MSS uplink transmissions. This is a significant problem that was left unaddressed in the NPRM. The Commission needs to make clear in any final rule what action is necessary by systems utilizing the secondary downlink application in the event of interference to systems utilizing this spectrum for its primary, uplink transmission purpose.

☞ The Commission should expeditiously allocate sufficient spectrum in the 20/30 GHz bands for feeder links associated with the MSS Above 1 GHz service. The Commission needs to ensure that there is adequate feeder link spectrum to support the service for which it has already allocated primary spectrum, and must not inadvertently stall the development of the MSS Above 1 GHz service by delaying this critical decision pending the outcome of other proceedings. Once this spectrum has been identified, any applicant should be permitted to amend its application to specify portions of the bands selected without triggering the "major amendment" proscription of the Commission's rules.

☞ The Commission should make clear that MSS Above 1 GHz space segment providers will not be considered to be offering Commercial Mobile Radio Services. Based on traditional regulatory definitions, the provision of space segment capacity by satellite system licensees to service providers is not common carriage, and should not be regulated as such. Moreover, given the Commission's proposal of a global coverage requirement for this service, and the enormous costs that such world-wide coverage capability will entail, inhibiting in any way the option of soliciting

substantial foreign investment would be both fundamentally illogical and ruinously imprudent.

☞ The Commission should standardize its procedures for the commencement of license terms by adopting rules or policies that mandate the issuance of a public notice announcing the start of each system's license term. This term should begin either six months after launch of the system's first spacecraft, or upon the licensee's filing of a certification reporting the "commencement of service transmissions," whichever occurs first. This procedure will provide the licensee, the Commission, and all interested parties with an objective reference point from which to gauge the date for renewal filing and expiration of a particular license. Given the very large sums of money that must necessarily be expended in order to implement MSS Above 1 GHz service, the Commission should also adopt a renewal expectancy for licensees that have established a record of consistent regulatory compliance.

☞ The Commission should allow for some flexibility in meeting system construction milestones to permit licensees to adjust to marketplace developments. To this end, the Commission should adopt a rule providing that it will grant reasonable milestone extension requests once half of the authorized satellites in the subject constellation have been launched. In addition, the Commission should adopt a procedure for initiating revocation proceedings in the event of missed milestones, rather than the arbitrary and ultimately ambiguous rule that authorizations will become "null and void" if a milestone or reporting deadline is missed.

☞ The Commission also needs to clarify the applicability of existing procedural rules, as well as its proposal to adopt "anti-trafficking" regulations, to the applicants now on file. Two applicants have already made significant changes to their ownership, and only one of these changes has actually been properly reported to the Commission as an application amendment. Thus, the Commission should review this matter, and make the applicability of its requirements clear to all applicants.

☞ Finally, the Commission should modify its proposed reporting requirements, either by eliminating them as unnecessary in light of the system technical standards proposed, or at a minimum, by taking affirmative steps to protect proprietary and commercially

> sensitive data. In any case, the scope of the reports should be limited to that information that is truly necessary to fulfill the Commission's information gathering objectives, which should be fully defined, explained and justified in this proceeding.

By making these critical improvements in its regulatory approach, the Commission can take great strides toward ensuring the expeditious development of a key element of the GII, with all of the benefits that improved international communication and cooperation can bring. In addition, however, these systems will also bring with them considerable domestic benefits, which the Commission also touched upon in its NPRM.

As the Commission recognized, the MSS Above 1 GHz service will not only serve remote and undeveloped areas of the world, it will also provide the first mobile telephone service to many rural areas of the United States, which are now unserved, or underserved, by cellular systems. At the same time, it will provide additional competition to existing cellular and future personal communications systems in areas where the market for mobile voice and data services is already well developed.[11/]

Moreover, the advent of global MSS networks will stimulate the U.S. economy in myriad ways. Not only will each service provider directly create thousands of jobs, but consumer electronics companies will add workers in order to meet demand for transceiver equipment. As the Commission noted in the NPRM, "the enhanced communications services offered by this industry will, of themselves,

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11/ See NPRM, 9 FCC Rcd at 1096 (¶ 2).

create a broad secondary economic growth potential."[12/] This potential includes providing better communications capability to existing businesses, and providing the type of rapid information exchange that will foster both new demand and new opportunity for commercial enterprises that can now only be the subject of conjecture, but which inevitably will evolve in the future global telecommunications environment.[13/]

The Commission should commit itself in this proceeding to expeditious action that will hasten the day when this new telecommunications environment will be a reality. Although the MSS Above 1 GHz service is only a part of the technological revolution necessary to create this environment, it may be the keystone in its initial development. The MSS Above 1 GHz service holds the promise of bringing the benefits of real-time mobile communications to vast new international markets, offering millions of potential customers the opportunity to escape isolation and participate in what can become a truly "global village."

12/ Id. at 1096 (¶ 3).

13/ See id.

DISCUSSION

I. QUALIFICATION REQUIREMENTS

A. TECHNICAL QUALIFICATIONS

1. MSS Systems Licensed In The MSS/RDSS Bands Should Be Required To Operate In Non-Geostationary Orbits, And The FCC Has The Legal Authority To Adopt Such A Requirement.

TRW supports the Commission's proposal to require MSS systems that are licensed in the MSS/RDSS bands to operate in non-geostationary orbits.[14/] The dedication of a pair of frequency bands to non-geostationary-system use would ensure the public's ability to obtain the many unique service benefits that non-geostationary systems offer to the United States and the entire world, without impairing the public's ability to access the geostationary MSS services that the Commission has already authorized in other frequency bands. In addition, the exclusion of geostationary systems from the MSS/RDSS bands would not substantially restrict competition among mobile satellite systems, as multiple non-geostationary MSS systems are poised to operate in the MSS/RDSS bands. Finally, under United States v. Storer Broadcasting Co.,[15/] and the long line of court and Commission decisions that followed, the

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14/ See NPRM, 9 FCC Rcd at 1106 (¶ 22).

15/ 351 U.S. 192 (1956) ("Storer").

Commission has the legal authority to establish threshold license-eligibility requirements.[16/] The proposed requirement that MSS systems in the MSS/RDSS bands operate in non-geostationary orbits falls well within the Commission's authority under Storer and its progeny.

For all of these reasons, as elaborated upon below, the Commission should not hesitate to finalize its proposed requirement.

16/ See, e.g., Hispanic Information & Telecommunications Network v. FCC, 865 F.2d 1289, 1294 (D.C. Cir. 1989) (Commission may establish threshold eligibility standards by rule and exclude without hearing those applicants plainly failing to meet the standard) (citing Storer, 351 U.S. at 202, 205); Mobil Oil Exploration & Producing Southeast, Inc. v. United Distribution Cos., ___ U.S. ___, ___, 111 S. Ct. 615, 626 (1991) ("'where an agency's enabling statute expressly requires it to hold a hearing, the agency may rely on its rulemaking authority to determine issues that do not require case-by-case consideration'") (quoting Heckler v. Campbell, 461 U.S. 458, 467 (1983)); American Hospital Ass'n v. NLRB, ___ U.S. ___, ___, 111 S. Ct. 1539, 1543 (1991) ("even if a statutory scheme requires individualized determinations, the decisionmaker has the authority to rely on rule making to resolve certain issues of general applicability . . ."); Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services, (Notice of Proposed Rule Making), 5 FCC Rcd 2766, 2767 (1990) (Commission "may establish threshold standards that applicants must satisfy before they are entitled to be eligible for comparative consideration"); Advanced Television Systems and Their Impact Upon The Existing Television Broadcast Service (Notice of Proposed Rule Making), 6 FCC Rcd 7024, 7025 (1991) (Commission "not preclude[d] . . . from establishing threshold qualification standards that must be met before applicants are entitled to comparative consideration"); Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Mobile Satellite Service for the Provision of Various Common Carrier Services, (Tentative Decision), 6 FCC Rcd 4900, 4902 (1991) ("AMSC Tentative Decision") ("The Storer decision . . . establishes that the Commission need not hold a full adjudicatory hearing prior to denial of an application that is inconsistent with rules enacted under" a threshold service requirement); Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services, 8 FCC Rcd 1659, 1659 (1993) ("It is well established under the Storer line of cases that an agency may limit Ashbacker or other statutory hearing rights by rules establishing threshold eligibility standards designed to serve the public interest").

a. The Commission Has The Legal Authority To Limit The MSS Above 1 GHz Service To Those Systems That Propose To Operate In Non-Geostationary Orbit.

The Commission has the legal authority to determine that only MSS Above 1 GHz systems that propose to operate in non-geostationary orbit may be found technically qualified. Although the United States Supreme Court held in Ashbacker Radio Corp. v. FCC[17/] that mutually exclusive applicants in an administrative proceeding have a right to a hearing, the Court later clarified that the Commission may, by exercise of its rulemaking power or through the establishment of cut-off deadlines for the submission of applications, impose upon applicants for radio station licenses threshold eligibility criteria that may operate to render an application absolutely ineligible for grant. In those circumstances, the Commission may deny one or more mutually exclusive applications without holding the "hearing" that would otherwise have been required under the Act.[18/]

It is important to note that the Commission has also held that threshold requirements may be applied to applications pending at the time the rules were adopted, and that such use of threshold requirements does not affect their

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17/ 326 U.S. 327 (1945) ("Ashbacker").

18/ See Storer, 351 U.S. at 202, 205.

validity.[19/] In its final decision establishing the American Mobile Satellite Corporation ("AMSC") consortium, the Commission held again that "[u]nder Storer, the Commission may adopt rules in the public interest establishing licensing eligibility criteria which effectively preclude a hearing under Section 309(e) for those applicants who do not satisfy the prescribed eligibility requirements."[20/]

The Commission states in its NPRM that "a LEO-only design requirement should provide U.S. customers with maximum access to a new, alternative voice-MSS technology, to the benefit of the public."[21/] Although the Commission thus has already noted that its proposal to limit MSS Above 1 GHz

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19/ See AMSC Tentative Decision, 6 FCC Rcd at 4903. In finding that it had the authority to establish the AMSC consortium, the Commission held that:

> [T]he fact that MSS applications already were pending at the time the consortium rule was promulgated does not in any way render the principles of the Storer decision inapposite to the MSS proceeding. The ownership rule at issue in Storer that avoided the need for a Section 309(e) hearing also was applied to an application that had been filed prior to the rule's adoption.

Id. AMSC may therefore not be heard to complain that it deserves a hearing merely because it filed its application prior to the establishment of the Commission's proposed threshold requirement for the MSS/RDSS bands.

20/ Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, (Final Decision on Remand), 7 FCC Rcd 266, 268 (1992) ("Final AMSC Licensing Decision") (citations omitted). As TRW demonstrates herein, the Commission's proposed limitation on use of the MSS/RDSS bands for non-geostationary systems is indisputably in the public interest.

21/ NPRM, 9 FCC Rcd at 1105 (¶ 20).